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ANTHROPOLOGY.

THE CLASSIFICATION OF STONE IMPLEMENTS.—The kindly criticism of my descriptions of the Indian relics found in New Jersey, in the Smithsonian Annual Report for 1875, by O. T. M., wherein he remarks that the writer has shown too great a fondness for classifying the various forms met with, suggests the propriety of offering a few remarks on the absolute necessity of field-work, in correctly pursuing archaeological study, at the same time without intending to intimate that my lenient critic is not competent to pass judgment; for certainly it cannot be said of the Smithsonian collections which he has studied that they have been ignorantly gathered, but archaeological specimens of themselves, purchased of dealers or picked up by others than students of the subject, are in a great measure valueless as helps to unravel any ethnological puzzle. I cannot conceive of a position in which one is more liable to fall into errors than in judging of the uses of stone implements from their shapes only. It cannot, in fact, be shown that the same pattern might not have had a far different use on the Atlantic coast from the present use of such a form in the far West. The “leaf-shaped arrowheads” are stated to be used only as knives in Colorado and Utah, but were doubtless also arrowheads in New Jersey. It must be remembered, too, that the varieties of stone implements are by no means endless. Rather their limited range of forms renders it obvious that the surroundings of a sea-coast tribe necessitate a different use for many of the simpler shapes than that of such tribes as occupied a mountainous region. The varieties of game, the pursuit of a primitive agriculture, and a hill-tribe’s general surroundings suggest at once uses for characteristic forms found there that would not be true of like forms found along the coast. This brings me to my subject proper, which is to insist that our *safest* guide in studying the relics of a locality long since deserted by its aboriginal occupants is the circumstances surrounding the discovery of every specimen found. To accomplish this an archaeologist must be his own collector. Fully convinced of this, I have personally gathered several thousands of relics from a tract of about one thousand acres, and have by no means exhausted the supply; and this laborious field-work resulted in the conviction that such and such a form was for this or that purpose, as a rule. As an illustration, let me instance those long, slender, tapering spears, which I have called “fishing spears.” The conclusion that they were used solely (?) for such a purpose was based on the fact that they are essentially (that is, in this locality) a “water find.” From the Delaware River, and especially from the deep mud of Crosswick’s Creek, I have dredged numbers of this pattern; and when found on the surface I believe they have always been very near the larger creeks and the river.

This association, coupled with the shape of the specimens, which is one admirably adapted to spearing fish, I submit, quite naturally suggests

such a use of this particular variety ; but the precise range of use of any one form of stone implement can scarcely be brought down to a mathematical demonstration. I cannot go further into detail, but will add that as in the case of fishing spears, so with many other forms, of which, perhaps, I have spoken too confidently ; but I still submit that the field rather than the cabinet is the proper place to study stone implements.

With reference to the division of the Stone age in New Jersey into an older and a later stage, I will but say that what I deem a conclusive demonstration of the correctness of this opinion will shortly be published in considerable detail, and until then on this most important point will gladly "rest our case." — CHARLES C. ABBOTT.

ANTHROPOLOGICAL NEWS. — In *Nature* for April 5, 1877, is a full report of a lecture delivered at the Royal Institution, London, by Francis Galton. The object was to show how individuals of different generations resemble each other so closely, while individuals do not necessarily tend to leave their like behind them, especially if they depart from the average ; yet, on the whole, the proportion of gradation of long and short, strong and feeble, and dark and pale appears to be constant. The author displays his accustomed ingenuity in the arrangement of his illustrative diagrams.

The committees on the "historical exhibition of ancient art in all countries, and of the ethnography of peoples foreign to France," to be opened at the Universal Exposition at Paris, in 1878, so far as appointed stand as follows: Adrien de Longperier, director; Gustav Schlumberger, general secretary. A commission of admission and classification, divided into nine sections, is charged with preparing and organizing the exhibit. The following gentlemen will preside over the sections: —

1. Primitive art and antiquity of Gaul, Alexander Bertrand, Jules Desnoyers, the Marquis of Vibraye, Frederic Moreau, Dr. Hamy.

9. Ethnography of peoples outside of France, Alphonse Pinart, J. L. Gerome, Albert Goupil, Dr. Hamy, Henri de Longperier.

Mr. D. B. Perry contributes to the *Saline County News*, published at Crete, Nebraska, an interesting letter on the Pawnees, correcting some mistakes made in Appleton's Cyclopedia, and pays a handsome tribute to Mrs. E. G. Platt, who spent many years among them. It is to be hoped that Mrs. Platt will give some permanency to her knowledge of this rapidly perishing tribe.

Volume iii., No. 1, of Prof. F. V. Hayden's Bulletin is out, and contains the following papers on anthropological matters: —

I. A Calendar of the Dakota Nation, by Bvt. Lt.-Col. Garrick Mallery, U. S. A., with a plate.

II. Researches in the Kjökkenmöddings and Graves of a Former Population of the Coast of Oregon, by Paul Schumacher. Seven plates.

III. Researches in the Kjökkenmöddings of a Former Population of

Santa Barbara Island and the Adjacent Mainland, by Paul Schumacher. Fourteen plates.

IV. The Twana Indians of the Skokomish Reservation, by Rev. M. Eells. Three plates.

The first paper is a very ingenious device of the Dakotas to represent the leading events of a series of years extending from 1800-1871. Of Mr. Schumacher's wonderful discoveries we have often spoken in terms of praise. Mr. Eells' paper is an elaborate set of answers to the pamphlet of directions sent to collectors for the Centennial Exhibition.

Dr. Frederick D. Lente, of Palatka, Fla., contributes to the March and April numbers of the *Semi-Tropical*, published at Jacksonville, two very interesting papers on the mounds of Florida. The doctor deserves great credit for this useful expenditure of his own leisure and for the advice conveyed in his papers concerning the good effect upon the minds and bodies of invalids, to be realized by seeking out-of-door amusement and occupation.

In 1872 M. Kouznetzoff was sent by the Russian government through the Lithuanian provinces to study their ethnography. The result of his labors occupies four volumes and a chart. The Lithuanian language has been encroached upon by the Prussians on the west, the Russians on the northeast, and by the Poles on the south. The study of this ancient branch of Aryan speech is made very interesting by the theory of Omalius, published in 1865, that the Aryan races are of European and not of Asiatic origin.

Dr. José Dionisio Anchorena sends to the Smithsonian Institution a copy of his *Gramatica Quechua, o del Idioma del Imperio de los Incas*. Lima. 1874.

Professor Huxley, in his lecture at the Kensington Museum, on Saturday, December 16, 1876, defined the boundaries of biology, stating that biologists surrendered all that part of the field which relates especially to the history of man as a social and moral being. Anthropology has been defined as the "biology of man;" but the restriction of the term "biological anthropology" to the application of Professor Huxley's definition to mankind will suit the meaning given to this term by M. Broca in his opening lecture before the Institut d'Anthropologie.

Another periodical, just started in Paris by MM. H. Gaidoz and E. Rolland, attests the growing interest in anthropological matters. It is called *Mélusine, Revue de Mythologie, Littérature Populaire, Traditions, et Usages*. While aiming to collect the myths and folk-lore of France in particular, it will cover the whole field of mythology and legend.

The Rev. Stephen D. Peet, Ashtabula, O., has issued a circular of the Archæological Exchange Club, containing the conditions of membership. The object is to effect an exchange of fugitive publications on archæology. We hail with especial commendation this effort to make our scattered archæologists better acquainted.

In the *Bulletin de la Société d'Anthropologie*, 1876, M. Bertillon contributes a paper on the influence of primogeniture on sexuality. The annual births in France are, in wedlock, 105 males to 100 females, live-born; dead-born, 137-100; all births, 106.6: 100. The illegitimate births reduce the ratio to 103.1: 100. In Austria the births are 106: 100; first-borns 110.3: 100; puines, 105.2: 100. Illegitimate first-borns, 103.6: 100; illegitimate puines, 105.8: 100. In the capital cities the first-borns were 114.4: 100; puines, 106: 100. Illegitimate first-borns, 102.1: 100; illegitimate puines, 106.6: 100. The subject was ably discussed by Lagneau and others, and was reverted to in a subsequent meeting. In the same journal, page 25, Dr. Paul Topinard discusses the "parietal angle" of M. De Quatrefages. Blumenbach, in 1775, arranged skulls in a line on the floor, and observed them from above, on the *norma verticalis*. Viewed in this way the zygomatic arches are more or less prominent, giving rise to the terms *cryptozygous* (white races) and *phænozygous* (yellow races). Prichard, in 1813, added the profile and face view, *norma parietalis* and *norma frontalis*. Owen introduced the study of the base, *norma basalis*. Prichard in directing his attention to the front view of the skull, enunciated his celebrated form called *ogival*. To verify his experiment, De Quatrefages invented his parietal goniometer, exhibited before the Académie des Sciences in 1858, and at the French Association in 1872. The parietal angle is formed by two lines tangent to the most salient points of the zygomatic arches and to the coronal suture. When the lines meet above, the angle is positive; when they meet below, the angle is negative. The positive angle is most marked in the yellow races; the negative in the fetus, and in some European adults.

In the third number of the *Bulletin de la Société d'Anthropologie*, M. De Mortillet has a paper on France in prehistoric times. It was read on the occasion of presenting to the society his chart on prehistoric France, prepared for *Nouvelle Géographie Universelle* of Elisée Réclus. Tables are given containing the number of localities in every district of the country. Something of the kind might be attempted in our own land. In the same journal are the following communications: *Découverte de gisements néolithique à Moret (Seine-et-Marne)*. *Sépulture à crémation, trépanation chirurgicale, et trépanation posthume*, by M. Choquet. *Étude sur une série de crânes recueillis dans le département du Puy-de-Dôme*, by M. Boyer. *Quelques observations anthropologique sur le département du Puy-de-Dôme*, by M. A. Rouyon. *Sur les peuples de l'Afrique Australe*. *Sur la langue et les traditions des Buschmans*, by P. de Jouvencal. *Sur deux séries de crânes provenant d'anciennes sépultures indiennes des environs de Bogota*, by M. P. Broca.

The want of space prevents more than a mere reference to the following papers and works: N. B. Denny, *The Folk Lore of China*, 8vo, London. E. A. Freeman, *Race and Language*; *Contemp. Rev.*, March.

Albert S. Gatschett, Remarks upon the Tonkawa Languages, read before the Am. Phil. Soc. November 17, 1876. Intorno Agli Scavi Archeologici fatti dal Sig. A. Arnoaldi, veli presso Bologna, Osservazioni del Conte Senatore G. Gozzadini; Bologna, 1877. Albin Kohn, Die Bienenkorbgäber bei Wrobelwo, Posen; *Archiv* ix., 4, 1877. A. Ecker, Sur Statistik der Körpergrösse im Grossherzogthum Baden; *Ib.* Von Baer, Von wo das Zinn zu den ganz alten Bronzen gekommen sein mag? *Ib.* P. Cazalis de Fondouce, The Palafittes of Laibach Moor; *Matériaux*, 2, 1877. C. Engelhardt, Influence of Classic Industry and Civilization upon those of the North during Ancient Times; *Ib.* M. Moura, The Age of Stone in Indo-China; *Ib.* J. Walhouse, On Non Sepulchral Monuments; London Anth. Inst., February 27th. Rev. Thomas Powell, F. L. S., On the Nature and Use of the Vegetable Poisons, employed by the Natives of the Samoan Islands; London Linnæan Society March 15th. Rev. A. C. Cleary, The Problem of Language; Victoria Institute, March 19th. Dr. Crockley Clapham, Brain Weight of the Chinese and Pelew Islanders; London Anth. Inst., March 29th. E. B. Tylor, Review of Spencer's Principles of Psychology; *Mind*, April. J. P. Mahaffey, Modern Excavations; *Contemp. Rev.*, April. Sir. J. Lubbock, Our Ancient Monuments; *Nineteenth Century*, April. The Rationale of Mythology, *Cornhill Mag.*, April. Die Völker Russlands; *Petermann's Mittheil.* I., 1877 (good). William Tegg, Meetings and Greetings: the Salutations, Observances, and Courtesies of all Nations; London, Tegg & Co. — OTIS T. MASON.

NOTE. We shall be glad to receive the titles of papers read before scientific bodies, or published in the journals of our country. — O. T. MASON, Washington, D. C.

GEOLOGY AND PALÆONTOLOGY.

INFLUENCE OF GEOLOGICAL CHANGES ON THE EARTH'S AXIS OF ROTATION. — Mr. George H. Darwin has presented a paper on this subject to the Royal Society. He concludes that if the earth be quite rigid, no redistribution of matter in new continents could ever cause the deviation of the pole from its primitive position to exceed the limit of about 3° . But if the view, that the earth readjusts itself periodically to a new form of equilibrium, is correct, then there is a possibility of a cumulative effect; and the pole may have wandered some 10° or 15° from its primitive position, or have made a smaller excursion, and returned to near its old place. No such cumulation is possible, however, with respect to the obliquity of the ecliptic. It is suggested that possibly the glacial period may not have been really one of great cold, but that Europe and North America may have been then in a much higher latitude, and that on the pole retreating they were brought back again to the warmth. There seem to be, however, certain geological objections to this view.